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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,168	09/10/2003	Joy Sawyer Bloom	AD6929 US NA	3753

23906 7590 05/26/2005

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WILMINGTON, DE 19805

EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/659,168

Applicant(s)

BLOOM, JOY SAWYER

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-10 and 12 is/are rejected.  
7) ☒ Claim(s) 11 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/25/05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

***Objections Withdrawn***

1. The objections to claims 6-10, in the Office action dated 11/22/2004, have been withdrawn due to Applicant's amendment dated 03/22/05.

***Rejections Repeated***

2. The 35 U.S.C. 102/103 rejection of claims 1-10, 12 has been repeated for the same reasons previously of record in the Office action dated 11/22/04.

***New Claim Objections***

3. Claim 11 is objected to because of the following informalities: The limitation of "containing at least two lubricating fillers" is redundant when further on, the claim recites four fillers: graphite, carbon fiber, mica and particulate polyimide, which are defined in original claim 4 by Applicant to be said lubricating fillers of original claim 1. Appropriate correction is required.

***Response to Arguments***

4. Applicant's arguments filed 03/22/05 have been fully considered but they are not persuasive.
5. Applicant argues that Long teaches an LCP with an onset of melting temperature in Table 1, column 11, and contends that Long discloses the melting temperature as

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indicated in Table 1, column 11, not the onset of melting temperature as in the present invention, wherein Long defines melting point as the point at which the polymer behaves as a fluid rather than a solid, i.e. at the very least, the peak of the DSC melting endotherm, which differs greatly from the onset of melting temperature used in the present invention.

Applicant is respectfully directed to the definition in Polymer Science Dictionary, 2<sup>nd</sup> edition, of the term "melting temperature" for a polymer, which teaches that the melting of a crystalline polymer normally occurs over a 10 – 20 °C range. Assuming that Long's "melting temperature" recorded is the highest temperature at the end of the normal 20 °C melting range, compositions 1-3 and 11 in Table 1, column 11 of Long, still meet Applicant's limitation of "onset of melting temperature of greater than 320 °C". Applicant has not provided valid comparative melting profile data to demonstrate that this is not the case. See response to the argument below.

6. Applicant argues that the examples in Long show the melt viscosity of the polymers to be 345 °C, and that reliable melt rheology data cannot be obtained unless the polymer is fluid.

Applicant is respectfully apprised that there does not appear to be any actual melt viscosity measurements corresponding to compositions 1-3, 11, which have reported melting temperatures of 357 – 375 °C. It is unclear how reliable the predicted melt viscosity data are based on the modeling equations used by Long (melt viscosity at 345 °C /1 Radian/Sec. versus inherent viscosity). Furthermore, even with a 345 °C melting point, the onset of the melting endotherm would still be greater than 320 °C over

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a 20 °C melting range, and therefore still meet Applicant's limitation of "onset of melting temperature of greater than 320 °C".

7. Applicant argues that when extrapolating the value of the onset melting temperature of 320 °C as claimed by Applicant, the melting point is approximately 377 °C, outside of the highest melting temperature (375 °C) of Long.

Applicant is respectfully apprised that extrapolation of data is the same as a prediction based on a model, and cannot compare with actual experimental data relating to actual compositions.

***Allowable Subject Matter***

8. Claim 11 is allowed. The closest prior art US 5,969,083 fails to teach or suggest the specific composition which comprises about 65 % by weight of liquid crystalline polyester material having an onset of melting temperature of greater than 320 °C, and contains four fillers wherein said fillers comprise (A) about 10 % by weight of graphite; (B) about 10 % by weight of carbon fiber; (C) about 5 % by weight of mica; and (D) about 10 % by weight of particulate polyimide, wherein the composition has an onset melting temperature of at least 320 °C and wear resistance of at least 1.75 MPa-m/s (50,000 psi-fpm). Applicant demonstrates that the specific composition recited shows unexpected results in terms of wear resistance performance (Applicant's specification, page 11).

As allowable subject matter has been indicated, Applicant's reply must either comply with all formal requirements or specifically traverse each requirement not

complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a). In the instant case, Applicant is respectfully requested to consider the new objection to the claim as set forth above.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*S. Hon*  
Sow-Fun Hon  
05/20/05

*[Signature]*  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

5/23/05